APRIL/MAY 2025

FEEL54A/CEEL54A/BEEL54A — MEDICAL ELECTRONICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

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1. What do you mean by bio-electricity?
2. Define bio-signal.
3. What is EEG?
4. Write the examples for electrodes used in ECG.
5. Define heart beat rate.
6. Mention the techniques used in blood flow measurement.
7. Write any two therapeutic applications of isotopes.
8. State the isotopes used pulmonary ventilation studies.

9. Write the frequencies used in short wave diathermy.

10. Mention the temperature limitation of hyperthermia.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Outline the followings :

(i) Requirements of bio amplifier

(ii) Bio-electricity

Or

(b) Discuss the isolation Amplifier.

12. (a) Explain the working of ECG.

Or

(b) Elucidate the functions of ERG.

13. (a) Explain the measurement of heart beat rate.

Or

(b) Elucidate the patient monitoring set up.

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14. (a) List out the therapeutic applications of X-ray.

Or

(b) Discuss the diagnostics application of isotopes.

15. (a) Describe the ultrasonic diathermy.

Or

(b) Enumerate the microwave diathermy.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the working of instrumentation amplifier.

17. Describe the EMG.

18. Explain the measurement of respiration rate.

19. Discuss the application of Lasers in biological medium.

20. Describe the short wave diathermy.

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